

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A method for constructing a multistory concrete shear core building comprising the steps of:

erecting a steel erection subassembly for a concrete shear core, the steel erection subassembly including a first plurality of vertical columns, a first plurality of horizontal beams, and a rebar screen;

erecting a peripheral structural steel subassembly including a second plurality of vertical columns and a second plurality of horizontal beams, the peripheral structural steel subassembly disposed about the steel erection subassembly;

installing a plurality of floor structures that are cooperatively supported by the steel erection subassembly and the peripheral structural steel subassembly;

positioning an inner form and an outer form about the steel erection subassembly such that the inner form and the outer form surround at least a portion of the rebar screen, the inner form and the outer form defining a volume that is adapted to receive a concrete pour; and

pouring concrete into the defined volume, such that the concrete and rebar screen form a portion of the concrete shear core for the multistory building.

2. The method of Claim 1, wherein the first plurality of vertical columns is disposed at least partially within the volume defined by the inner form and the outer form, whereby the first plurality of vertical columns is at least partially embedded in the concrete after pouring the concrete.

3. The method of Claim 2, wherein the steel erection subassembly is sized to cooperatively support at least ten floors of the plurality of floor structures.

4. The method of Claim 2, wherein the steel erection subassembly is built from a plurality of segments, each segment including at least one of the first plurality of vertical columns and at least one of the first plurality of horizontal beams, and wherein the segments are approximately two floors in height.

5. The method of Claim 4, wherein each segment further comprises a portion of the rebar screen and wherein the portion of the rebar screen is fixedly attached to the at least one horizontal beam.

6. The method of Claim 4, wherein the inner forms are at least two floors in height and the outer forms are approximately one floor in height.

7. The method of Claim 1, further comprising the step of erecting at least six additional steel erection subassemblies and at least six additional peripheral structural steel subassemblies before pouring concrete into the volume defined by the inner form and outer form.

8. The method of Claim 2, wherein the first plurality of horizontal beams are structural wide flange beams, and further, wherein at least some of the first plurality of horizontal beams are positioned adjacent the outer forms such that the concrete poured into the defined volume will lockingly engage at least one side of the horizontal beams adjacent the outer forms.

9. The method of Claim 1, wherein the concrete shear core is designed to support the completed multistory concrete shear core building, without accounting for the structural support provided by the steel erection subassemblies.

10. A method for constructing a multistory concrete shear core building comprising the steps of:

building a steel erection structure at least seven floors tall, the steel erection structure including a first plurality of vertical columns, a first plurality of horizontal beams, and a plurality of steel reinforcing bars;

building a steel framing structure at least seven floors tall, the steel framing structure including a second plurality of vertical columns and a second plurality of horizontal beams;

installing at least one floor structure that is cooperatively supported by the steel erection structure and the structural framing structure;

positioning an inner form and an outer form about the steel erection structure such that the inner form and the outer form surround at least a portion of the steel reinforcing

bars, the inner form and the outer form defining a volume that is adapted to receive a concrete pour;

pouring concrete into the defined volume such that the concrete and the steel reinforcing bars form a portion of a concrete shear core for the concrete shear core building;

vertically extending the steel erection structure and the steel framing structure;

repositioning the inner form and the outer form to define a second volume directly above the first volume; and

pouring concrete into the second volume, thereby vertically extending the concrete shear core.

11. The method of Claim 10, wherein the first plurality of vertical columns is disposed at least partially within the volume defined by the inner form and outer form, whereby the first plurality of vertical columns is at least partially embedded in the concrete after pouring the concrete.

12. The method of Claim 11, wherein the steel erection structure is sized to cooperatively support about ten floors of the floor structure.

13. The method of Claim 11, wherein the steel erection structure is built from a plurality of one-tier segments, each segment including at least some of the first plurality of vertical columns and at least some of the first plurality of horizontal beams.

14. The method of Claim 13, wherein each one-tier segment further includes a plurality of the steel reinforcing bars.

15. A method for constructing a multistory concrete shear core building comprising the steps of:

preassembling a plurality of steel erection segments, each steel erection segment having a first plurality of vertical columns, a first plurality of horizontal beams, and a plurality of steel reinforcing bars;

building a steel erection subassembly by assembling the plurality of steel erection segments into a substantially rectangular column;

building a peripheral structural steel subassembly including a second plurality of vertical columns and a second plurality of horizontal beams;

installing at least one floor structure that is cooperatively supported by the steel erection subassembly and the peripheral structural steel subassembly;

positioning an inner form and an outer form about the steel erection subassembly such that the inner form and outer form surround at least a portion of the plurality of steel reinforcing bars, the inner form and outer form defining a volume that is adapted to receive a concrete pour; and

pouring concrete into the defined volume such that the concrete and the plurality of steel reinforcing bars form a portion of a concrete shear core for the concrete shear core building.

16. The method of Claim 15, wherein the first plurality of vertical columns is disposed at least partially within the volume defined by the inner form and the outer form, whereby the first plurality of vertical columns is at least partially embedded in the concrete after pouring the concrete.

17. The method of Claim 16, wherein the steel erection subassembly is sized to cooperatively support at least ten floors of the floor structure.

18. The method of Claim 16, wherein the steel erection subassembly is built from a plurality of segments, each segment including at least one of the first plurality of vertical columns and at least one of the first plurality of horizontal beams, and wherein the segments are approximately two floors in height.

19. The method of Claim 18, wherein each segment further comprises a portion of the plurality of steel reinforcing bars.

20. The method of Claim 18, wherein the inner forms are at least two floors in height and the outer forms are approximately one floor in height.

21. The method of Claim 15, further comprising the step of building at least six additional steel erection subassemblies and at least six additional peripheral structural

steel subassemblies before pouring concrete into the volume defined by the inner form and outer form.

22. The method of Claim 16, wherein the first plurality of horizontal beams are structural wide flange beams, and further, wherein at least some of the first plurality of horizontal beams is positioned adjacent to the outer forms such that the concrete poured into the defined volume will lockingly engage the wide flange beam.

23. The method of Claim 15, wherein the concrete shear core is designed to support the completed multistory concrete shear core building, without accounting for the structural support provided by the steel erection subassemblies.